SYNOPSIS

A new definition of power-factor based on the energy flow at every instant is developed and illustrated with test results. Unconventional methods of power-factor compensation employing optimisation techniques based on calculus of variations are described for abnormal loads.

Digital computer programs are developed for the design of power-factor compensators. Compensation is achieved by presenting a variable conductance in parallel with the load. This is realised by ordinary resistors controlled by thyristor switching circuits; basic forms of which are presented.

It is believed that the present work is the first attempt to apply optimisation techniques to power-factor compensation problems, and it promises to be useful, particularly, for abnormal loads.

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